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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/320,349	05/26/1999	DONALD SCOTT WEDGE	019474-00010	4586

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EXAMINER

MCCHESENEY, ELIZABETH A

ART UNIT

PAPER NUMBER

2644

DATE MAILED: 06/19/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/320,349

Applicant(s)

WEDGE, DONALD SCOTT

Examiner

Elizabeth A McChesney

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 18-22 is/are allowed.
- 6) ☒ Claim(s) 1-5, 7, 14 and 15 is/are rejected.
- 7) ☒ Claim(s) 6, 8-13, 16 and 17 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2, 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 4, 7 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Begault (US Patent No. 5,438,623).

Regarding claim 1, Begault discloses imposing spatial cues to a plurality of audio inputs. Begault further discloses 10₁-10₄ as a plurality of separate devices capable of receiving four separate audio signals for example, four different radio communications channel frequencies (col. 3-lines 41-46). Therefore Begault reads on receiving a first radio transmission, at a first carrier frequency f₁ (see figure 1). The demodulation is inherently taught as an audio signal is produced as an audio signal is received via the headset. Begault further discloses imparting a first spatial cue 16₁, which produces a right and left signal. Begault further discloses receiving a second radio transmission with a second carrier frequency f₂ wherein a second special cue 16₂ is applied and produces a second right and left signal. Begault further discloses providing the first and second right audio signal to a right channel summer to distribute to a right transducer (headphone speaker) and a first and second left audio signal to a left channel summer to distribute to a left transducer (headphone speaker).

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Regarding claim 2, Begault discloses the capability of receiving, for example, four radio communications channel frequencies wherein it is inherently implied that radio communication is well known in the art as a continuous broadcast (col. 3-lines 44-45).

Regarding claim 4, Begault discloses the special cue does provide channel separation and thus outputs a separate right and left signal (see figure 1).

Regarding claim 7, Begault discloses imposing spatial cues to a plurality of audio inputs. Begault further discloses 10_1 - 10_4 as a plurality of separate devices capable of receiving four separate audio signals for example, four different radio communications channel frequencies (col. 3-lines 41-46). Therefore Begault reads on receiving a first radio transmission, at a first carrier frequency f_1 (see figure 1). The demodulation is inherently taught as an audio signal is produced as an audio signal is received via the headset. Begault further discloses imparting a first spatial cue 16_1 , which produces a right and left signal. Begault further discloses receiving a second radio transmission with a second carrier frequency f_2 wherein a second special cue 16_2 is applied and produces a second right and left signal. Begault further discloses providing the first and second right audio signal to a right channel summer to distribute to a right channel output (headphone speaker) and a first and second left audio signal to a left channel summer to distribute to a left channel output (headphone speaker).

Regarding claim 15, Begault discloses imposing spatial cues to a plurality of audio inputs. Begault further discloses 10_1 - 10_4 as a plurality of separate devices capable of receiving four separate audio signals for example, four different radio communications channel frequencies (col. 3-lines 41-46). Therefore Begault reads on

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receiving a first radio transmission, at a first carrier frequency f_1 (see figure 1). The demodulation is inherently taught as an audio signal is produced as an audio signal is received via the headset. Begault further discloses imparting a first spatial cue 16_1 , which produces a right and left signal. Begault discloses imparting different spatial cues wherein using HRTF generates separate perceptions of the channels due to the virtual sound locations and thus the listener perceives the audio signals coming from unique locations.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3, 5 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Begault (US Patent No. 5,438,623).

Regarding claim 3, Begault fails to specifically disclose the continuous broadcast as a weather report broadcast. However, weather broadcasts are a well known radio communication channel and therefore it would have been obvious to one of ordinary skill in the art to use the weather broadcast as the continuous broadcast to be aware of updated weather changes.

Regarding claim 5, Begault discloses imparting different spatial cues wherein using HRTF generates separate perceptions of the channels due to the virtual sound

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locations. The differences in locations in relation to the listener's head provide a detected amplitude difference and which the applicant recognizes as known in the art and stated in the disclosure (page 6-lines 10-13). Therefore it would have been obvious to one of ordinary skill in the art to provide an amplitude difference of the separate channels through the use the HRTF for the spatial cues.

Regarding claim 14, Begault discloses imposing spatial cues to a plurality of audio inputs. Begault further discloses 10₁-10₄ as a plurality of separate devices capable of receiving four separate audio signals for example, four different radio communications channel frequencies (col. 3-lines 41-46). Therefore Begault reads on receiving a first radio transmission, at a first carrier frequency f_1 (see figure 1). The demodulation is inherently taught as an audio signal is produced as an audio signal is received via the headset. Begault further discloses imparting a first spatial cue 16₁, which produces a right and left signal. Begault further discloses receiving a second radio transmission with a second carrier frequency f_2 wherein the first right, first left and the second audio signal are combined in the summers. The second audio signal is claimed broadly wherein the second audio's components are in fact combined with the first right and first left audio signals. It would have been obvious for one of ordinary skill to recognize that the spatial cues of the first audio signal improves the perception of the signal versus not using the spatial cue wherein the use of the HRTF give the listener a location associated with the signal to establish the uniqueness of the signal.

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Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Connor et al. (US Patent No. 6,011,851) discloses spatial audio processing method.

6. Claims 6, 8-13 and 16-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. Claims 18-22 are allowed.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth A. McChesney whose telephone number is (703) 308-4563. The examiner can normally be reached Monday – Friday, 8:00 am – 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W. Isen can be reached on (703) 305-4386.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

Or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

EAM *EAM*
June 13, 2003

Forester W. Isen
FORESTER W. ISEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600